

swissbit®

Product fact sheet

Industrial CFAST™ Card

F-100 Series

SATA II - 3.0Gb/s
up to UDMA6 / MDMA2 / PIO4

Standard and industrial
temperature grade

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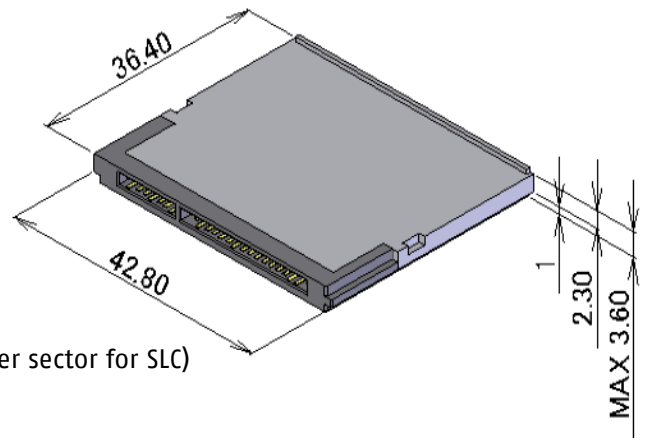


CFAST Solid State Drive (SSD) with SATA interface

4GByte up to 32GByte (32GB coming soon)

Feature summary

- CompactFlash-card sized Solid State Drive (SSD) with SATA interface
 - 42.8mm x 36.4mm x 3.6mm
- 7+17 pin (SATA+power) CFAST connector
- SATA Rev 2.6 – 3Gbit/s (1.5Gbit/s compatible)
- Highly-integrated memory controller
 - max. UDMA6 supported
 - max. PIO mode 4, MDMA2 supported
 - SLC Nand Flash used for standard products
 - Hardware BCH-code ECC (8 Bit correction per sector for SLC)
 - fix drive configuration
- Low-power CMOS technology
- 3.3V ± 5% power supply
- Low Power, less than 500mA (CFAST Power level 0)
- No mechanical noise
- Activity LED output (LED₁)
- Wear Leveling: active wear leveling of static and dynamic data
The wear leveling assures that dynamic data as well as static data is balanced evenly across the memory. With that the maximum write endurance of the device is guaranteed.
- Write endurance: Due to intelligent wear leveling an even use of the entire flash is guaranteed, regardless how much "static" (OS) data is stored.
Example: If the average file size is 10MByte and the total capacity is 8GByte, 80Mio write cycles can be performed.
- High reliability
 - MTBF > 2,500,000 hours
 - Data reliability: < 1 non-recoverable error per 10¹⁴ bits read
 - Number of connector insertions/removals: >10,000
- High performance
 - Up to 300MB/s burst transfer rate in SATA II – 3.0Gb/sec
 - Sustained Write performance: up to 90MB/s
 - Sustained Read Performance: up to 105MB/s
- Available densities
 - 4GByte up to 16GByte (SLC Nand Flash) – 32GB coming soon
- 2 Temperature ranges
 - Commercial Temperature range 0 ... +70°C
 - Industrial Temperature range -40 ... +85°C
- Controlled BOM
- RoHS compatible



Offered OEM options

- Reducing MDMA and/or UDMA modes
- Customer specified drive size and drive geometry (C/H/S – cylinder/head/sector)
- Customer specified drive ID (Strings)
- Preload service (also drive images with any file system)
- Customized marking
- ...

Table 1: System Performance

System Performance	16GB	8GB	Unit
Data transfer Rate (sATA burst)	3.0 (1.5)	3.0 (1.5)	Gbit/s
Sustained Read (max. measured)	105	100	MB/s
Sustained Write (max. measured)	90	54	

1. All values refer to 16GB card with Samsung 4x K9WBGFlash, SSD in UDMA mode 5, SATA 3.0Gbit/s, write/read file sequential.
2. Sustained Speed depends on flash type and number, file size, and burst speed

Table 2: Current consumption⁽¹⁾ at 3.3V ± 5%

Current Consumption	typical	max	Unit
write (UDMA6)	290	380	mA
Read (UDMA6)	330	420	
Slumber	210	220	
Sleep Mode	20	20	

1. All values are typical at 25° C and nominal supply voltage and refer to 16GByte CFAST card.

Table 3: Environmental Specifications

Environmental Specifications	Operating	Non Operating
Temperature (commercial)	0 to 70°C	-40 to 85°C
Temperature (industrial)	-40 to 85°C	-50 to 95°C
Humidity (non-condensing)	85% RH, at 85°C	max. 95% RH, at 85°C
Vibration (peak -to-peak)	20G Peak, 10...2000Hz	
Shock	1500G, 0.5ms duration, half sine wave	
Connector Durability	10,000 mating cycles, without exceeding low-level contact resistance	

Table 4: Physical Dimensions

Physical Dimensions		Unit
Width	36.4	mm
Height	42.8	
Thickness	3.6	
Weight (typ.)	10	g

Table 5: SSD capacity specification

Capacity	Default_cylinders	Default_heads	Default_sectors_track	Sectors_drive	Total addressable capacity (Byte)
4GB	7,814	16	63	7,876,512	4,032,774,144
8GB	15,628	16	63	15,753,024	8,065,548,288
16GB	16,383*)	16	63	31,506,432	16,131,293,184
32GB	16,383*)	16	63	TBD	TBD

*) The CHS addressing is limited to about 8GB. Larger drives should be used in LBA mode.

Table 6: System Reliability and Maintenance

MTBF (at 25°C)	> 2,500,000 hours
Data Reliability	< 1 Non-Recoverable Error per 10 ¹⁴ bits Read

(1) Dependent on final system qualification data.

The CFA logo and CFast are trademarks of the CompactFlash Association.

For more information on the CFast interface, please visit Compact Flash Organization at

www.compactflash.org

For more information on Serial ATA Revision 2.6, please visit Serial ATA International Organization at

www.serialata.org



Why Swissbit?

Swissbit strives to create innovative technologies for future market opportunities utilizing a highly skilled in-house product research and development team. Swissbit maintains a marketing edge by continuing to manufacture world-class high quality memory products and providing customers with both high value and low cost of ownership achieved through efficient processes and procedures.